

# The Research Partnership between TMDU and Noguchi Memorial Institute for Medical Research, Ghana: Prospects for the Next Step

Ghana-Tokyo Medical and Dental University Research Collaboration Center

Nobuo Ohta

MD, PhD  
Professor, Environmental  
Parasitology, TMDU

## Research Collaboration in West Africa

Our international research collaboration project between Japan and Ghana started in 2008 as part of the Program for Founding Research Centers for Emerging and Reemerging Infectious Diseases, sponsored by the Ministry of Education, Culture, Sports and Technology (MEXT). The aim of this program is to promote on-site research into infectious diseases to improve public health in Japan and the counterpart countries, as well as to develop human resources in the field of infectious disease research. We are now in the second phase of the MEXT program, which is named the Japan Initiative for Global Network on Infectious Diseases (J-GRID). From a global point of view, sub-Saharan Africa is an area with an urgent need for the control of infectious diseases. There are only two J-GRID projects being implemented in Africa. One is the project at our Ghana Center in West Africa, and the other is at the Zambia Center in East Africa. In this sense, our situation in the MEXT project is quite important, and it is expected to lead to expanded and more intensive research collaboration between Africa and Japan.

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Our counterpart in Ghana is the Noguchi Memorial Institute for Medical Research (NMIMR). Using the MEXT scheme, TMDU founded its International Collaboration Center at NMIMR in 2008. Since then, two researchers, Professors Eiji Ido and Takashi Suzuki, have been dispatched to the collaboration center at NMIMR, to implement research and to promote the exchange of students and researchers between TMDU and NMIMR.

The final year of the J-GRID program was 2014, and it has been announced that the scope and scheme of the MEXT program will be reconstructed for the next five years of activities. Members of our project have started discussions for the next phase of our collaboration project.

Virology and Parasitology are the two main components of our research project. HIV and viral hemorrhagic fever are the topics of our virology research. Both diseases represent a serious health problem in the West African sub-region. The main targets of our parasitology research are malaria and trypanosomiasis. All of these are globally significant diseases, with pathogens specific to Africa. This means that Japanese researchers have had direct access to the pathogens, which is an important opportunity for researchers in infectious disease. Our collaborative center provided unique and significant opportunities for the Japanese researchers, and TMDU is expected to maintain and expand this research collaboration project.

## Education and Training in Ghana

One of the aims of our international collaboration center at NMIMR was to promote exchange in education and training, as well as in research. For this purpose, several mutual visits were arranged between Ghana and Japan, and more than 20 young Japanese and Ghanaian staff and students have visited each other in the past years.



- ① Research collaboration in a parasitology laboratory.
- ② Joint meeting of research output from J-GRID project. Researchers from both sides met and discussed self-evaluation.
- ③ A PhD student of TMDU gave seminar at NMIMR to exchange scientific information of entomological research carried out in the joint project.

In order to provide young Japanese students and researchers with experience in an African setting, we sought to establish a procedure for dispatching Japanese undergraduate students to Ghana. In the past two years, medical students from TMDU were dispatched to NMIMR to join the MEXT research project. Although three students were scheduled to go in 2014, it was unfortunately cancelled because of the Ebola epidemic in West Africa. Ebola was not epidemic in Ghana, but for the sake of security, TMDU decided to pass up traveling to Ghana. The program will be resumed when the epidemic subsides.

Encouraging young Ghanaian researchers is another obligation of our exchange. Based on the agreement, TMDU has invited young researchers from NMIMR for training in conducting laboratory experiments. Although they were short-term experiences, young Ghanaians enjoyed the training, and the opportunity to engage with Japanese culture and people.

Another project added to this program was a PhD course funded by the Japanese Government. The PhD program named Global Health Leaders for Disease Prevention started in 2014. This is for fostering health leaders with a scientific mind. In 2014, two talented young people from NMIMR joined the PhD course at TMDU. This is important for promoting the research capabilities of our partner towards stronger collaboration.

## Kind Support from the Diplomatic Scheme

Recurrence of diseases in West Africa; The Ebola epidemic in Guinea, Sierra Leone and Liberia, located in West African Sub-region was a major news item. Although those countries are far away from Ghana, NMIMR was designated to be the reference center for testing Ebola. In the latter half of 2014, NMIMR was busy testing

samples from patients thought to be infected. Fortunately, all samples tested at NMIMR were negative, but all the staff including our TMDU team were nervous when we received the samples.

Another topic was a recurrent episode of African trypanosomiasis. Another name for this is African sleeping sickness, and it can be fatal without sufficient care. Although no human patients were reported in the past decade, human cases have been reported in Ghana since 2013. Ghana can be considered to be located on the front line of infectious diseases.

With help from various organizations, the collaboration project between TMDU and NMIMR is making steady improvement towards the future.

2014年9月5日  
JICAガーナ事務所

エボラウイルス感染症に伴う対応について

本年 3 月末からギニアで流行が始まったエボラウイルス感染症が、隣国シエラレオネ、リベリアに拡大し、患者数の増加が見られます。また、これらの地域から移動した患者がナイジェリアやセネガルで発症したケースも出ています。

エボラウイルス感染症の初期症状は、発熱・頭痛・倦怠感で主で、マラリアやインフルエンザと似たような症状です。引き続き、嘔吐や下痢を繰り返し、かなり状態が進むと出血まで至ります。エボラウイルス感染症は、触れなければ大丈夫です。空気感染する感染症と比べ、予防しやすい感染症です。ガーナを含む流行国以外の国や地域でエボラウイルスという患者が増加していますが、その殆どはエボラではなかったという事実があります。

エボラウイルス感染症は、潜伏期間内(症状発生前)に感染することはありません。すなわち、熱が出ていない人からうつることはありません。熱が出ている人の汗や唾液などが目や口などの粘膜に付着してしまうと、感染の危険があります。健康な人が皮膚に接触した程度では、すぐに感染は避けられます。(別添をご参照ください。)

ガーナでは、現在まで、エボラウイルス感染症が陽性(Positive)と確認されたケースはありません。また、ガーナ政府は、万が一感染例が出たとしても流行が止まれるよう対策を講じています。

JICA 事務所としても、情報の収集に努めており、重要な情報については、早急に皆さんにご連絡いたします。また、地元の情報はカバーできない場合がありますので、カウンターパートや近隣の住民等から「エボラウイルス感染症にかかる情報」を得ましたら、担当所員、ボランティア調整員、健康管理員にご連絡ください。当事務所から、新たな情報がありましたら、随時連絡させていただきます。

万が一、感染が確認された患者が発生する際にも、通常の生活を送る限り「感染」する恐れはないと考えています。一方、この影響で、地域封鎖(道路封鎖)や会場の不安により、ラジカル等の交通手段が確保できなくなる恐れがありますので、アクサ等への一時的な遅延も検討します。また、医療関係機関に勤務されている関係者については、感染予防のため、自宅待機や一時的な退避をお願いすることがあります。

このため、常日頃から食料品や水の備蓄(おおよそ 1 週間程度)、バスボートや貴重品をすぐに持ち出せるようにする等、心構えを行うようにお願いいたします。

Information about the Ebola epidemic in the West African sub-region was released through official and private channels in 2014.

TMDU staff visited Vice Chancellor, Professor Aryeetey, to discuss further collaboration between TMDU and the University of Ghana.



Professor Kwadwo Koram, Director of NMIMR and Visiting Professor at TMDU.





# Growing TMDU Network in Latin American Countries; Academic, Educational and Clinical Collaborations

Latin American Collaborative Research Center,  
Tokyo Medical and Dental University, Santiago, Chile

**Tatsuyuki Kawano**  
MD, PhD  
Professor, Esophageal and  
General Surgery, TMDU

**IN 1968, PROFESSOR** Tadashige Murakami, former professor of surgery of TMDU, visited Chile to give a lecture on gastric cancer. This was the start of long relationship between TMDU and Chile. In the 1970s, the Japan International Cooperation Agency (JICA) launched a project for the early detection of gastric cancers in order to reduce their high mortality rate. The Gastric Cancer Center in Santiago was founded in 1977 at Hospital Paula Jaraquemada (now the Hospital Clinico San Borja Arriaran), and this center has long played a major role in the project. TMDU also dispatched numerous experts there to support the prevention of gastric cancer. The Gastric Cancer Center was later renamed the Chilean-Japanese Institute for Digestive Diseases, and it still contributes to maintaining the health of the Chilean people.

## Colorectal Cancer Screening in Chile, Supported by TMDU

In Chile, the mortality from colorectal cancer has been increasing in the last two decades, and the requirement for colorectal cancer screening has grown rapidly. Based on a proposal from Dr. Lopez of the Clinica Las Condes (CLC), one of the biggest and most advanced hospitals in Chile, approval was given to start a screening project for colorectal cancer. Due to the long history between TMDU and Chile, our university was invited to supervise the project. In 2009, the Ministry of Health of Chile, CLC and TMDU signed a collaboration agreement for colorectal cancer

screening (Fig. 1), and the Latin American Collaborative Research Center (LACRC) was established at CLC in 2010. TMDU has continuously sent experts in pathology, endoscopy and research to LACRC. From 2012, PRENEC (the Prevention Project for Neoplasia of Colon and Rectum) has been implemented in three major cities, Punta Arenas, Valparaiso and Santiago. More cities are planning to join the project in the near future. The Japanese method using immunological fecal occult blood test and colonoscopy has been adopted for the detection of colorectal cancer. From 2012 to 2013, 11,311 participants were enrolled through PRENEC, and 99 of them (0.89%) were found to have colorectal cancers.

Furthermore, approximately two-thirds of these patients were treated endoscopically using polypectomy or mucosectomy, without surgery. The Chilean-Japanese Institute for Digestive Diseases at Hospital San Borja Arriaran is the headquarter of PRENEC in Santiago. The institute also serves as a training center for endoscopy. Three Chilean doctors took a training course in endoscopy, acquiring the skills required for colonoscopic cancer screening. The Institute's endoscopy unit has been renovated for PRENEC, with extensive support from the Japanese Embassy in Chile.

## Conversation with the First Lady of Japan

In July, Japan's Prime Minister Shinzo Abe and the first lady Akie Abe paid an official visit to Chile. On the occasion of their visit, a ceremony was held at Hospital San Borja Arriaran, commemorating the donation of medical devices from the Japanese Embassy in Chile. Ms. Akie Abe attended the ceremony and had a conversation with doctors from LACRC and the hospital. Ms. Akie Abe spoke encouraging words for the dedicated activities of LACRC, and expressed her hope for the improved welfare of the Chilean people (Fig. 2).



## LACRC members and University Activities in 2014

LACRC is staffed by experts from the pathology, endoscopy and research departments of TMDU, and various doctors have been involved in their work in Chile. As of 2014, LACRC is operated by three TMDU doctors, Dr. Hiroshi Kawachi (pathologist, since March 2012), Dr. Maki Kobayashi (molecular biologist, since July 2012), and Dr. Takuya Okada (endoscopist, since April 2013). Two more doctors joined the endoscopic department, Dr. Masahiro Tsubaki in October, and Dr. Tomoyuki Odagaki in November 2014.

TMDU operates the Project Semester program, appointing medical students to institutions overseas. Four to six students are sent to Chile every year. The students are attached to the laboratories at the University of Chile and CLC, where they participate in innovative studies with local researchers. LACRC supports their work and everyday lives in Chile (Fig. 3).

TMDU seeks to enhance its academic and educational relationship with Chile. In 2013, TMDU and the University of Chile, the leading university in the country, reached an agreement of on a Joint Degree Program that will enable doctors or researchers to receive a joint degree issued by both universities. Through this attractive program, the two universities offer interchangeable classes and courses, and participants can select the most suitable curriculum from a wide range of options. Thorough preparation is currently underway and the program will start in 2016 (Fig. 4).

## Projects in Ecuador and Paraguay

TMDU came to an agreement regarding a cancer screening program with the government of Ecuador in 2012. At that time, a pilot project for colorectal cancer screening was being carried out at National Hospital Pablo Arturo Suarez in Quito, with clinical and project management support



from TMDU. LACRC sent doctors from Chile to Ecuador several times, for discussions and to makes suggestions about the cancer screening system (Fig. 5).

Academically speaking, the Ministry of Health of Ecuador holds annual medical congresses in Quito, and TMDU professors are regularly invited as presenters. In Paraguay, TMDU agreed to a direct request from the President of Paraguay for support for the colorectal cancer screening project. Dr. Kawachi from TMDU attended a signing ceremony for the agreement held in Asuncion in June 2013.

## METI Project for Colorectal Cancer Screening in Brazil

The Ministry of Economy, Trade, and Industry, Japan(METI) recently asked TMDU to start colorectal cancer screening in Brazil. In July 2013, TMDU set up a consortium to handle the project offered by METI, with two Japanese enterprises, Fujifilm Corporation (endoscopy) and Eiken Chemical Co., Ltd (immunological fecal occult blood tests). The first delegate of the consortium visited Sao Paulo in October 2013, and reached an agreement for collaboration with three major hospitals, including the University of Sao Paulo. Brazilian doctors, nurses and coordinators visited Chile twice in September 2013 and January 2014, to receive guidance in colorectal cancer screening.



1 Conclusion of an agreement for colorectal cancer screening between the Chilean Ministry of Health, CLC and TMDU



2 Ms. Akie Abe, the First Lady of Japan, with LACRC staff and TMDU at Hospital San Borja Arriaran in Santiago  
3 Research presentations by TMDU students at CLC  
4 Dr. Vivaldi, President of the University of Chile and staff, with the TMDU delegate to Chile

5 Dr. Kawachi and Dr. Okada from LACRC at the workshop in Ecuador



# Strengthening Relationships between TMDU and Universities in Southeast Asia

CU-TMDU Research and Education Collaboration Center, Thailand

Yoko Kawaguchi

DDS, PhD  
Professor, Oral Health  
Promotion, TMDU

## Joint Degree Program

TMDU and Chulalongkorn University held their first meeting on May 12, 2014 with the aim of establishing a Joint Degree Program on Dental Science. The purpose of the meeting was to form a Joint Degree Program committee with the aim of starting the program in August of 2016. For the Faculty of Dentistry, Chulalongkorn University, this is the first time to create a joint degree program. Both universities have agreed to open this joint degree program in August of 2016 as scheduled, and it is expected that students of this joint degree program will become leaders of dental science in Southeast Asia, as well as in Japan.

## Studying Abroad at TMDU

TMDU provided information about our school, especially the graduate school, to potential candidates of our Ph.D. program at meetings of the South East Asia Association for Dental Education (SEAADE) and International Association for Dental Research Southeast Asia Division (IADR SEA) in Kuching, Malaysia, held August 9-14, 2014. Many people stopped by the TMDU booth to listen to the explanations given by TMDU staff, especially international students. International students described their own experiences and student life at TMDU. Nearly 200 visitors from Africa, the Middle East, and Asia, especially East Asia, came to the TMDU booth.

The first joint meeting for Joint Degree Program



## Student Exchange Program

**School of Dentistry, Faculty of Dentistry**  
Three 4th year students from the Faculty of Dentistry, TMDU received training at Srinakharinwirot University and Chulalongkorn University. They also visited the health center in Bangkok and the children's center in a suburb of Bangkok to study dental care in Thailand. This program was conducted from August 29 to September 6, 2014, under the Re-inventing Japan Project.

**School of Health Care Sciences, Faculty of Medicine**

TMDU concluded a memorandum of understanding on Academic and Student Exchange with the Faculty of Allied Health Sciences, Chulalongkorn University on November 8, 2013. As part of the student exchange program, six students from the School of Health Care Sciences and Graduate School received training and held a cultural exchange event at the Faculty of Allied Health Science, Chulalongkorn University from August 17 to 27, 2014 under the sponsorship of the Re-inventing Japan Project.

**School of Medicine, Faculty of Medicine**  
Three 4th year students from the School of Medicine received training in the Faculty of Medicine, Chulalongkorn University, June 25 to November 21, 2014 as part of the Project Semester and Re-inventing Japan Project. These student exchange programs will contribute to an expanded medical and dental network between TMDU and universities in Southeast Asia in the future.

## Agreement on Academic Exchange Faculty of Dentistry, Naresuan University

On June 23, 2014 an Agreement on Academic Exchange was concluded between Prof. Keiji Moriyama, Dean of Faculty of Dentistry, TMDU and Dr. Thaosapol Piyappattamin, Dean of Faculty of Dentistry, Naresuan University at Naresuan University located in Phitsanulok, Phitsanulok



Province, Northern Thailand. After the agreement signing ceremony, Prof. Keiji Moriyama, Dean of Faculty of Dentistry and Prof. Yoko Kawaguchi, Graduate School of Medical and Dental Sciences gave special lectures to the students of the Faculty of Dentistry, NU.

## Health Seminar and Consultation for Japanese Residents

TMDU conducted a health seminar and dental consultation for Japanese residents in Thailand at Bangkok General Hospital with co-sponsorship from Bangkok General Hospital on May 31, 2014. In the health seminar, Prof. Yasunari Miyazaki, Director of the Office of Student Support and Health Administration Organization, Junior Associate Professor Tatsuo Kawamoto from Maxillofacial Orthognathics, and Dr. Thiravud Khuaprema, Visiting Professor of TMDU and Director of Cancer Center of Bangkok Hospital gave presentations.

The dental consultation was conducted by Dr. Yoshiaki Ono from the Department of Pediatric Dentistry, Dr. Shinji Kuroda from the Department of Oral Implantology and Regenerative Dental Medicine, Dr. Kazuto Kurohara from the Department of Maxillofacial Surgery, Dr. Yuichi Ikeda from the Department of Periodontology, and Dr. Tatsuo Kawamoto from the Department of Maxillofacial Orthognathics.

## Dental e-learning Seminar

On July 15, 2014 a dental e-learning seminar was conducted at the CU-TMDU Research and Education Collaboration Center, located in CU, for 18 former international students in the Faculty of Dentistry, CU and Chiang Mai University.

In the seminar, Prof. Atsuhiko Kinoshita, Director of the Institute for Library and Media Information Technology, TMDU and Assistant Prof. Masayo Sunaga from the Institute for Library and Media Information Technology, TMDU, intro-



duced the idea of e-learning, explained how to use e-learning, and gave instructions on how to create software. Participants asked TMDU to offer the dental e-learning seminar at other universities too.

## Chiang Mai University

On November 11, 2014, an Agreement on Academic Exchange was concluded between Prof. Yoshinobu Eishi, Dean of Faculty of Medicine, TMDU and Assoc. Prof. Watana Navacharoen, Dean of Faculty of Medicine, Chiang Mai University. A collaboration in the field of anatomy is planned for the near future.

## Srinakharinwirot University

A memorial event was held in the Faculty of Dentistry at Srinakharinwirot University to celebrate the 20th anniversary of the founding of the Faculty. Prof. Keiji Moriyama, Dean of Faculty of Dentistry, TMDU attended and delivered a congratulatory address. TMDU and Srinakharinwirot University signed an Agreement for Academic Exchange in 2010, and we have since conducted a student exchange program.

## Tree of Friendship in Chulalongkorn University

On February 28, 2014, we held a memorial tree planting ceremony at Chulalongkorn University. Prof. Takashi Ohyama, President of TMDU at the time, and Prof. Pirom Kamolratanakul, President of Chulalongkorn University, planted a "Thai-Sakura" tree to represent the friendship between both universities. This tree is a symbol of the enhanced collaboration between the universities. The "Thai-Sakura" tree is a very famous tree in Thailand. It was planted in front of the administration building where many people pass by. The tree is getting taller day by day, symbolizing our hope for further engagement between our universities.



① Signing ceremony of MOU between TMDU and Naresuan University

② Dental training program in Thailand

③ Cultural exchange program in Thailand